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# Section 6

## State Water Plan - Cedar/Beaver Basin

### Management

#### 6.1 Introduction

The demand for water is moving from agricultural to municipal and industrial uses, particularly in Cedar Valley. Although irrigated crop production is a major industry in the basin, increasing requirements for culinary water may result in conflicts over use of the existing supplies. Along with this comes the need for innovative management. This section describes present water management and discusses potential management alternatives.

#### 6.2 Setting

With the settlement of Parowan in 1851, the first water was diverted from Center Creek to irrigate crops. Water was diverted from Coal Creek a year later for the same purpose. As the number of settlements increased, usually at the mouth of a canyon or near a stream, water continued to be developed, primarily for culinary and agricultural uses. Some areas were founded because of other activities, such as Milford which was developed because of mining and the coming of the railroad near the turn of the century.

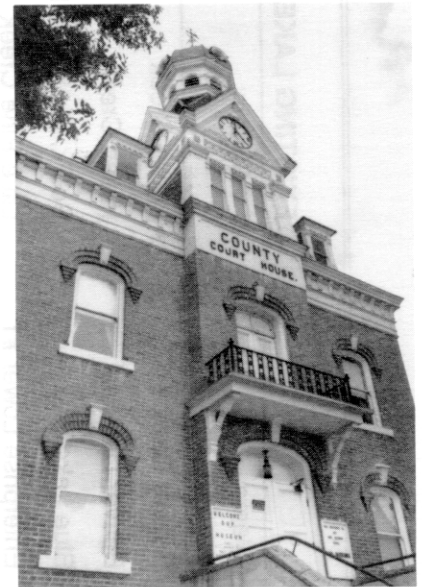
It soon became evident more permanent water control structures were needed to withstand the effects of floods on the various water systems. As a result, more efficient facilities were installed to divert and convey water and to utilize it better. Modern pipelines are

now used to convey water from wells and springs to the place of use on agricultural lands and in communities and individual homes. There has been a vast improvement from agricultural practices in the early days of settlement. The modern delivery of culinary water is a far cry from carrying or hauling it in buckets or barrels from streams and ditches to the individual homes.

Surface water storage reservoirs have been constructed on most of the rivers and streams. They have become an important part of the management of water delivery systems throughout the basin. Related benefits include flood control, water-based recreation and improved fisheries. Some of the lakes are not used for storage, but they are shown for information only. The existing lakes and surface water storage reservoirs are described in Table 6-1 and shown on Figure 6-1.

All water supplies are delivered and distributed according to state law by various entities who have the rights to use and distribute this resource. This includes not only the quantity of water by appropriated right but also there is increasing pressure to regulate the quality of water distributed. Quality is

■ **Water is the most valuable natural resource. For this reason, its management is a primary concern of local water users. This becomes even more important since water is often in short supply.**



*Beaver County Courthouse*

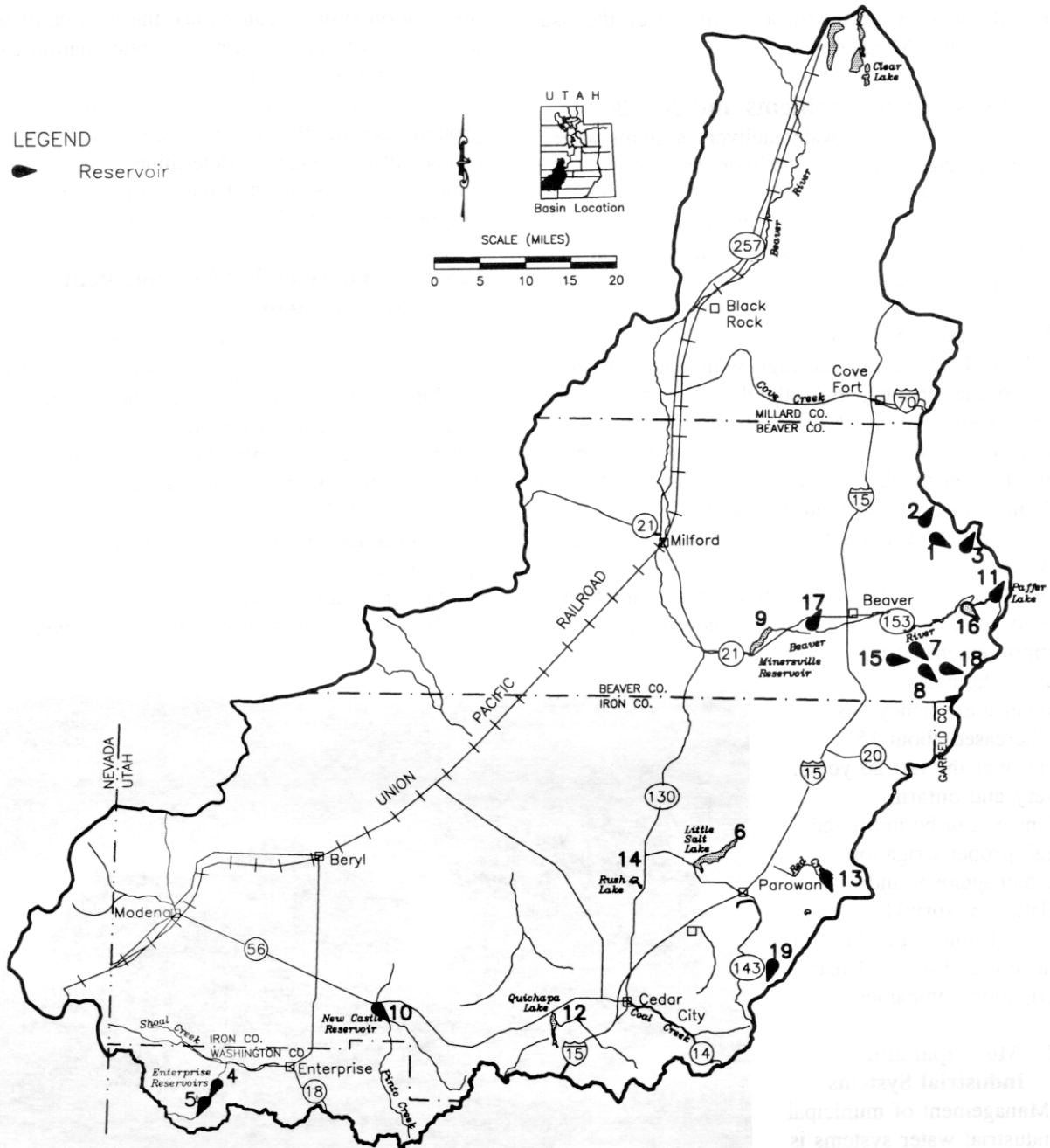
**Table 6-1  
EXISTING LAKES AND WATER STORAGE RESERVOIRS<sup>62</sup>**

Name	Stream	Location T R S	Capacity (Acre-feet)	Surface Area (Acres)	Purpose <sup>a</sup>
1 Beaver Dam, #1 <sup>b</sup>	Indian Creek	27S 6W 36	350	25	I
2 Beaver Dam, #2 <sup>c</sup>	Indian Creek	27S 6W 250	110	9	I <sup>e</sup>
3 Blue Lake	So.Fk. of N.Cr.of Beaver R.	28S 5W 4	370	20	I
4 Enterprise Lower #1	Little Pine Creek	37S 18W 34	2,672	75	I, F, FC
5 Enterprise Upper #2	Little Pine Creek	37S 18W 34	9,950	335	I, F, MI, FC
6 Little Salt Lake	Parowan, Red, Summit, etc.	33S 9W 29	Varies		ltm
7 Lower Kent's Lake	South Fork of Beaver River	29S 5W 21	180	15	
8 Middle Kent's Lake	South Fork of Beaver River	30S 5W 6	975	40	I
9 Minersville <sup>d</sup>	Beaver River	30S 9W 11	21,000	1,177	I, FC
10 Newcastle	Pinto Creek	36S 15W 22	5,290	100	I, FC
11 Puffer Lake	Stream	29S 5W 1	897	75	F <sup>f</sup>
12 Quichapa	Coal Cr, Duncan Cr., etc.	36S 12W 28	Varies		ltm
13 Red Creek	Red Creek	34S 7W 7	1,360	50	I, FC
14 Rush Lake	Braffits Creek, etc.	34S 11W 12	Varies	Varies	ltm
15 South Creek	South Creek	30S 7W 1	300	15	I
16 Three Creeks	Three Creeks, Beaver River	29S 5W 9	2,069	60	I, P, FC
17 Tipperary	North Creek	29S 8W 26	125	30	I
18 Upper Kent's Lake	South Fork of Beaver River	30S 5W 5	155	30	I
19 Yankee Meadows	Bowery Creek	35S 8W 20	1,200	60	F, P, I

<sup>a</sup> Purpose: F- Fishing; FC- Flood Control; I- Irrigation; MI- Municipal and Industrial; P- Power; ltm - Intermittent.

<sup>b</sup> aka, Manderfield; <sup>c</sup> aka, Upper Beaver Dam; <sup>d</sup> aka, Rocky Ford; <sup>e</sup> Breached, 1994; <sup>f</sup> Dam washed out

**Figure 6-1**  
**EXISTING LAKES AND RESERVOIRS**  
**Cedar/Beaver Basin**



SOURCE: USDA WATER AND RELATED LAND RESOURCES SUMMARY REPORT, BEAVER RIVER BASIN & STATE ENGINEERS OFFICE.

particularly important where water is used for culinary purposes.

### **6.3 Policy Issues and Recommendations**

There are no policy issues discussed in this section. Refer to Section 7 for a discussion on the issue of "Groundwater Management."

### **6.4 Management Problems and Needs**

There are irrigation water delivery systems where improved management would deliver more of the water to the place of use. Alternate sources of supply may be advisable in some cases. See Section 10 for additional discussion of irrigation water systems and Section 11 concerning drinking water.

#### **6.4.1 Irrigation Systems**

The lack of storage and high sediment yields, both watershed and channel, make the distribution and use of water from Coal Creek difficult. See Section 10.5 for more information. Storage would provide better timing of water availability from Little Creek, Meadow Creek and East Fork of Pinto Creek. See Section 9, Table 9-5 and Figure 9-1 for data on potential storage reservoirs.

Even though most of the irrigation systems have relatively high delivery efficiencies, there is still room for improvement. It is estimated the basin conveyance efficiency has been increased about 15 percent over the last 20 years. Delivery and onfarm efficiencies can be improved through proper irrigation water management and installation of sprinklers, gated pipe, canal lining, pipelines or land leveling. Table 6-2 lists the irrigation companies.

#### **6.4.2 Municipal and Industrial Systems**

Management of municipal and industrial water systems is a key to the maintenance or improvement of the quality and quantity of existing supplies. Areas around springs can be protected to avoid contamination. Often there are

opportunities for spring development to increase flows. Although it is more difficult, areas around wells can be protected to reduce the chance of pollutants entering the groundwater supply or directly into the pumping facility. Timely maintenance of conveyance and distribution systems can reduce the volume of water lost through leaks and prevent contamination from entering culinary pipe lines.

There may be a need to further study the available groundwater supplies to obtain additional data so future courses of action can be determined. This is especially important because most if not all of the additional supplies will come from groundwater.

### **6.5 Alternatives for Management Improvement**

There are always alternatives for those with management responsibility to consider to improve their capability. All alternatives should be considered and the most likely options selected to make the best use of the water resources available. The concept of total area management of surface water and groundwater should be considered. This would coordinate management of all systems and provide the inertia needed to make optimum use of all water resources. Water conservation practices are valid for all uses.

Where new subdivisions are being developed, an



*Coal Creek near Cedar City*

**Table 6-2**  
**IRRIGATION COMPANIES<sup>25,62</sup>**

Company	Irrigated Area (acres)	Conveyance Efficiency (percent)
<b>Beaver County</b>		
Aberdare Bench Canal Company	800	77
Adobe Yard Slough and Patterson Dam Company	640	
Allred Ditch	40	
Bald Hills Irrigation Company		
Barton Ditch Association	400	78
Beaver Dam Reservoir and Irrigation Company		
Benson Ditch Irrigation Company		
Cache Valley Dairy Association	70	
County Road Drain	150	75
Emerson Ditch		
Furnace Ditch	300	
Greenville Field Upper Ditch Company	300	88
Harris-Willis Irrigation Company		
Kents Lake Reservoir Company	500	60
Lindsay Ditch	110	90
Mammoth Canal & Irrigation Company	1,400	86
Manderfield Irrigation & Reservoir Co., Inc.	1,500	80
Minersville Reservoir & Irrigation Company	2,000	95
North Creek Irrigation Company	2,700	89
Patterson Ditch	640	70
Pine Creek	400	86
Rocky Ford Irrigation Company	4,000	88
Second Northeast Bench Canal & Irrigation Co.	670	77
Second Northwest Canal and Irrigation Company	700	70
Second South Bench Reservoir & Irrigation Co.	500	77
Second South Field Ditch Company	400	78
Shepard Ditch	330	65
Southcreek Primary "A" Water Users Irr. Co.	700	85
Southcreek Ranch Water Company	110	81
Southern Utah Water Resources Dev. Corp.		
West Field Canal & Irrigation Company	600	68
West Side Irrigation Company	1,300	80
Willis Canal and Irrigation Company	500	70
Yardley Cattle Company	500	60

adequate water supply and distribution system should be required as part of the permit requirements.

Secondary systems can conserve high quality water for culinary use by using lower quality water for outside residential uses.

The improvement and conservation of all water uses are discussed in other appropriate sections of this

plan. Refer to sections 9, 10, 11, 12 and 17 for more information. ■ ■

Table 6-2 (Continued)

Company	Irrigated Area (acres)	Conveyance Efficiency (percent)
<b>Iron County</b>		
Angus Water Company, Inc.		
Bauer Irrigation Company		
Bulldog	500	85
Cedar North Field Reservoir & Irr. Co.	670	75
Coal Creek Irrigation Company	8,030	80
East Extension Irrigation Company	750	92
East Union Irrigation Company	1,000	75
Hamilton Fort Irrigation Company	480	95
Hamlin Valley Water Users Association		
Highway 18 Water Company		
Linealsam Water Company, Inc.		
Little Creek Canal Company	800	89
Navajo Ridge Water Company, Inc.		
Newcastle Reservoir Company	3,000	90
Northfield Irrigation Company	670	90
Northroad Water Company, Inc.		
Northwest Field Irrigation Company		
Old Fort & Old Field Reservoir Irr. Co.	520	87
Paragonah Canal Company	1,300	93
Parowan Fields Irrigation Company		
Parowan Reservoir Company	3,100	85
South and West Field Irrigation Company	550	87
Summit Irrigation Stock Company	1,000	95
Union Field Irrigation Company	1,000	88
<b>Washington County</b>		
Black Canyon Irrigation Company		
Enterprise Reservoir and Canal Company	2,500	85
Enterprise Valley Pumpers, Assn.		
Knell Ditch Company		
Meadow Canyon Creek	100	90
Pinto Irrigation Company	200	90
Tullis Ditch	200	40

Note: Data are not available where there are blank spaces.